

BROCAK, Jaroslav

SURNAME, Given Names

Country: Czechoslovakia

Academic Degrees: Not given

Affiliation: Biologic Institute, Czechoslovak Academy of Sciences,
Department of Phytopathology, Prague (Biologicky Ustav CSAV
oddeleni fytopatologie)

Source: Prague, Biologia Plantarum, Vol 5, No 4, 1961; pp285 -290
Data: Biologic and electron microscope study of
"Strichelkrankheit" (Striate disease?) of tomatoes.

(SAV: Ceskoslovenska Akademia Ved)

GPO 981643

BREČAK, Jaroslav

Interference of the tobacco mosaic virus with the cucumber mosaic virus on tobacco plants. Biologia plantarum 4 no.3:176-181 '62.

1. Phytopathologische Abteilung des Instituts für experimentelle Botanik der Tschechoslowakischen Akademie der Wissenschaften, Na Karlovce 1, Praha-Dejvice.

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BRCÁK, Jaroslav

Biological and electronmicroscopic determination of streak in tomatoes. *Biologia plantarum* 3 no.4:285-290 '61.

1. Phytopathologische Abteilung des Biologischen Institutes der Tschechoslowakischen Akademie der Wissenschaften, Praha 6 - Dejvice, Na Karlovce 1.

BROCAK, Jaroslav

Identification of the yellows virus and the beet mosaic virus by electronic microscope and biological methods. Listy cukrovar 80 no.11:281-287 N '64.

1. Department of Phytopathology of the Institute of Experimental Botany of the Czechoslovak Academy of Sciences, Prague.

DJORDJEVIC-CAMBA, Djordje; BURIJAN, Jovan; BRCELJ, Stefanija

A case of parathyroprival tetany treated with bone grafting.
Srp arhiv lekar 82 no.2:241-245 F '54. (REAL 3:7)

1.1 Hirurska klinika Medicinskog fakulteta u Beogradu, upravnik:
prof. dr. Milivoje Kostic, II Interna klinika Medicinskog fakulteta,
upravnik: prof. dr. Djordje Brkic. (Rad je Urednistvo primilo 10-
IX-1953 god.)

(TRANSPLANTATION

*bone, in ther. of parathyroprival tetany)

(TETANY

*parathyroprival, ther., bone transpl.)

(BONES, transpl.

*in ther. of parathyroprival tetany)

BRJC

The system, $\text{CaO} + \text{SiO}_2$. I. Branko S. Brčić (Tech. Hochschule, Ljubljana, Yugoslavia). *Zbornik* 83, 318-24 (1951).—The solid-state reaction of CaO with SiO_2 was investigated as a function of furnace temp., furnace length, mixt. compn., and preheating briquet pressure. The extent of reaction was followed by detg. the percentage SiO_2 sol. in 2% HCl . The CaO was added as Ca(OH)_2 , its activity being increased by the addn. of $\text{Ca(NO}_3)_2$. It was found that 575° was the lowest temp. at which the reaction proceeds. The percentage sol. SiO_2 after 6 hrs. heating at 575° for the following addns. to 1 part SiO_2 were: 2CaO , 0.8; 2Ca(OH)_2 , 4.3; $2\text{Ca(NO}_3)_2$, 30.5; $2\text{Ca(OH)}_2 + 0.1 \text{Fe}_2\text{O}_3$, 3.9; $2\text{Ca(OH)}_2 + 0.2\text{Fe(NO}_3)_3$, 10.0; $2\text{Ca(NO}_3)_2 + 0.1\text{Fe}_2\text{O}_3$, 55.5; $2\text{Ca(OH)}_2 + 0.2\text{Ca(NO}_3)_2$, 77.5; and $\text{Ca(OH)}_2 + 0.1\text{Ca(NO}_3)_2$, 40-77%. Both NaCN and KIO_3 are much less effective than is $\text{Ca(NO}_3)_2$ in facilitating the formation of sol. silicates. II. *Ibid.* 325-6.—Heating the mixts. of SiO_2 and Ca(OH)_2 or $\text{Ca(NO}_3)_2$ in a stream of pure air increases the yield of sol. silicate by several fold over that obtained when the solids remain in contact with their decompn. gases.

John H. Wood

BRCIC, B.

BRCIC, B.; Slivaik, J. On the synthesis of uranium hexafluoride.
In English. p.147

Vol. 2, May 1955
REPORTS
SCIENCE
Ljubljana

So: East European Accession, Vol. 6, No. 3, March 1957

BRCIC, BRANKO

YUGOSLAVIA/Physical Chemistry - Thermodynamics,
Thermochemistry, Equilibria, Physical-Chemical
Analysis, Phase Transitions.

B-8

Abs Jour : Ref Zhur - Khimiya, No 7, 1958, 20634

Author : Branko Brcic, Bogdan Volavsek, Jernej Jernejcic.

Inst : -

Title : On the Solubility of Chromite in Sulfuric Acid.

Orig Pub : Kemiya u industriji, 1957, 6, No 7, 189-191

Abstract : The possibility of chromite (I) dissolution in a little excess of H_2SO_4 (50%) in presence of compounds of 6-valent Cr was investigated. The yield of solute Cr depends very much on the dispersion of I. The yield is 67.5%, if the particle size was about 100μ and it rises gradually with the dispersion increase. An addition of Fe neutralizes the solution. The method of using an excess of acid was used for the preparation of crystalline ferrosulfate and of the salt of 3-valent Cr with the necessary degree of acidity.

Card 1/1

SLIVNIK, J.; BRCIC, B.; VOLAVSEK, B.; SMALC, A.; FRLEC, B.; ZEM LJIC, R.; ANZUR, A.; VEKSLI, Z.

On the synthesis of, and magnetic measurements on, xenon tetrafluoride.
Croat chem acta 34 no.3:187-188 '62.

1. "Jozsef Stefan" Institute for Nuclear Research, Ljubljana, Slovenia, Yugoslavia (for Slivnik, Brcic, Volavsek, Smalc, Frlec, Zemljic, and Anzur.) 2. Institute "Ruder Boskovic", Zagreb, Croatia, Yugoslavia (for Vekslj).

BRCIC, Branko S.; JERNEJIC, Jernej F.

Contributions to the knowledge of the system $\text{CaO} \text{ - } \text{SiO}_2$. Pt. 4.
Glas Hem dr 25/26 no.8/10:466-468 '60/'61.

BRCIC, B.S.; MILICEV, S.; SIFTAR, J.

Synthesis of calcium metatitanate at low temperature. I. Croat
chem acta 33 no.4:169-179 '61.

1. Laboratorij za anorgansko kemijo, Institut za kemijo,
Univerza v Ljubljani.

BRCIC, B.S.; GOLIC, L.; PETERNEL, P.; SIFTAR, J.; ZUMER, M.

The $\text{CaO} - \text{Al}_2\text{O}_3$ at low temperatures. Vest Slov kem dr 9
no.1/2:27-32 Ja-Je '62.

1. Laboratorij za anorgansko kemijo, Institut za kemijo
Univerze v Ljubljani.

BRCIG, B.S.; CUK, M.

Water vapor for preventing pyrophorus in UO_2 powder.
Vest slov kem dr 9 no.3/4:55-56 J1-D '63.

1. Nuklearni institut "Jozef Stefan", Ljubljana.

BRCIC, B.S.; JERNEJCIC, J.

The $\text{BaO-Ba(NO}_3)_2$, $\text{Ba(OH)}_2\text{-Ba(NO}_3)_2$, and $\text{SrO-Sr(NO}_3)_2$ systems.
Vest Slov kem dr 9 no.3/4:65 J1-D '63.

1. Laboratorij za anorgansko kemijo Instituta za kemijo
Univerze v Ljubljani.

BRCIC, B.S.; BRENCIC, J.; SIFTAR, J;

Synthesis of calcium metatitanate at low temperature. Pt. 2.
Croat chem acta 35 no.2:135-139 '63.

1. Laboratorij za anorgansko kemijo, Institut za kemijo,
Univerza v Ljubljani.

FRIEC, B.: BRCIC, B.S.; SILVNIK, J.

Studies in the $N_2H_6F_2$ - UF_6 -HF system. Croat chem acta 36 no.3:173
'64.

1. Jozef Stefan Institute, Ljubljana. Submitted July 15, 1964.

BRCIC, V.

Third Yugoslav Congress in Mechanics. p. 492. TEHNIKA (Savez inzenjera itehnicara Jugoslavije) Beograd. Vol. 11, no. 4, 1956

SOURCE: East Europe Accession Lists (EEAL),
Library of Congress, Vol. 5, no. 11, Nov. 1956

BRCIC, V.

TECHNOLOGY

Periodical: SAOPSTENJA. TRANSACTIONS. No. 6, 1957.

BRCIC, V. An example of applying the photoelastic method. p. 23.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, no. 3
March 1959 Unclass.

BRGIC, Vlatko, dr inz.

Photoelastic studies on the state of stresses in the gravity dams
with orifices. Sapp Inst vodopr Cerni no.12:1-20 '58.

RADOJKOVIC, Milan; BRCIC, Vlatko

Intensity of the pressure centered on the junctions of the
plates in lattice girders. Zbor grad Univ Beograd 5 197-210
'62.

BRCIC, Vlatko, dr inz.

The 6th Yugoslav Congress of Rational and Applied Mechanics.
Tehnika Jug 17 no.10:1848-1850 0 '62.

BRGIC-KOSTIC, Mato (Subotica)

Solution of a generalized Fermat equation. Ves mat fiz Srb
no.11:17-22 '59.

BRICIC-KOSTIC, Mato, dr. prof. (Subotica, Aleja Marsala Tita 4); DIRNER,
Aleksandar, inz., prof. (Subotica, Brace Radica 38)

House water installations with hydrophore supplied by piston
or centrifugal pump. Tehnika Jug 19 no.5:Suppl. Masinstvo 13
no.5:875-884 My '64.

1. Higher Technical School, Subotica.

BRDA, J.; KRAL, F.

"System of Crop Rotation and Mechanized Manuring", P. 719, (ZA
SOCIALISTICKE ZEMEDELSTVI, Vol. 4, No. 7/8, July/Aug. 1954, Praha,
Czechoslovakia)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 3, No. 12,
Dec. 1954, Uncl.

CZECHOSLOVAKIA

KOPECKY, J.; ~~BRDA, M.~~; Research Institute of Pharmacy and Biochemistry (Vyzkumny Ustav pro Farmacii a Biochemii), Prague.

"Synthesis of L(+) -2,2'-(Ethylenediimino)-di-1-Butanol (Ethambutol)."

Prague, Ceskoslovenska Farmacie, Vol 15, No 7, Sep 66, pp 367-368

Abstract [Authors' English summary modified_7: The chemical discussed is a stereospecific antituberculous agent; it was synthesized by hydrogenolytic debenzylation of L(+)-2,2'-(ethylene-N,N'-dibenzylimino)-di-1-butanol, prepared from optically active 2-benzylamino-1-butanol and ethylenedibromide by alkylation. 10 Western, 2 Czech, 3 Russian, 1 Hungarian reference.

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MILETIC, B.; PETROVIC, D.; HAN, A.; BRDAR, B.

Morphological changes produced by x-rays on animal cells in tissue cultures. Vojnosanit. pregl. 20 no.7:415-419 JI '63.

1. Institut "Ruder Boskovic" u Zagrebu, Radioloski odjel.
(RADIATION EFFECTS) (TISSUE CULTURE)
(CYTOLOGY)

S

MILETIC, B.; HAN, A.; BRDAR, B.; PETROVIC, D.

Quantitative analysis of the survival of animal cells following
x-irradiation. Vojnosanit. pregl. 20 no.8:489-494 Ag '63.

1. Institut "Ruder Boskovic" u Zagrebu. Radioloski odjel.
(RADIATION EFFECTS) (TISSUE CULTURE)
(CYTOLOGY)

S

SMIT, Slavica; MILETIC, Branimir; DRAKULIC, Marija; STAVRIC, Stanislava;
BRDAR, Branko

Photo restoration of the biosynthesis of nucleic acids in
irradiated bacteria. Biol glas 15 no. 4: 207-214 '62.

1. Institut "Ruder Boskovic", Radiobioloski odjel, Zagreb.

MILETIC, B.; PETROVIC, D.; BRDAR, B.; DRAKULIC, M.

Restoration of irradiated animal cells with isologous subcellular fractions. Vojnosanit Pregl. 20 no.10:629-635 0 '63.

1. Institut "Ruder Boskovic," Zagreb, radiobioloski odjel.

PETROVIC, D.; BRDAR, B.; MILETIC, B.; HAN, A.

Effect of chloramphenicol on the division and survival of
L-strain cells in culture. Vojnosanit. pregl. 20 no.12:
752-757 D'63.

1. Institut "Ruder Boskovic", Zagreb, radiobioloski odjel.

*

YUGOSLAVIA

R. BRDARIĆ, M. MIHOLJČIĆ and S. JADRIĆ, Department of Physiology and Biochemistry of Medical Faculty (Institut za fiziologiju i bihemiju Medicinskog fakulteta,) Sarajevo.

"Paper Chromatography of Rat Salivary and Pancreatic Amylase."

Belgrade, Arhiv za Farmaciju, Vol 13, No 2, 1963; pp 93-97.

Abstract [English summary modified]: Study of effect of these enzymes on 1% solution of starch over 10 and 30 minutes, 6 and 24 hours: paper chromatographic analysis. Main differences were that pancreatic amylase produced more glucose earlier but both amylases formed sugars easily; final hydrolysis products differed but slightly. Table, two paper chromatograms; 18 Western-language references include 1 unpub. by authors.

1/1

BRDEK, Miroslav, CSc.

Some trends in the development of food product consumption in the member states of the Council of Mutual Economic Assistance, Prague, 15 no.10:487-492 O '64.

1. Research Institute of Economic Planning, Prague.

BRDICKA, Miroslav

Brdicka, Miroslav. Reflection of light by glass with a transparent homogeneous surface coating. Rozprawy II. Třidy České Akad. 57, no. 10, 18 pp. (1947). (Czech)

Source: Mathematical Reviews,

Vol 9 No. 7

Brdicka, Miroslav. The reflexion of light from glass with
a transparent homogeneous surface-layer. Acad.
Tchèque Sci. Bull. Int. Cl. Sci. Math. Nat. 48 (1947),
63-70 (1950).

The problem indicated by the title can be reduced to the
solution of a single complex equation, which, however, can-
not be solved by algebraic methods. The present paper
transforms this equation to a real equation of fifth degree,
whose real roots can then be approximated to any desired
accuracy. M. Herzberger (Rochester, N. Y.).

Source: Mathematical Reviews,

Vol 12. No. 4

Brdička, Miroslav

Brdička, Miroslav. The reflexion of light from glass with a natural transparent inhomogeneous surface-layer. Acad. Tchèque Sci. Bull. Int. Cl. Sci. Math. Nat. 49 (1948), 81-89 (1950).

In the study of the reflection of plane polarized light many reflecting substances exhibit a feeble elliptical polarization which is explained by assuming that a thin transparent surface-layer is spontaneously formed. Drude [Lehrbuch der Optik, Hirzel, Leipzig, 1900, p. 275] has suggested a formula for the polarization if the dielectric constant of the layer is given as a function of its distance from the glass surface. The author suggests a special formula for this dependency and then computes from Drude's formula the polarization. The results are compared with experimental data obtained by the author.

M. Meisberger.

Source: Mathematical Reviews,

Vol. 12 No. 9

S.A.

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BRIDGED M

Particle Theory

530.143
2425. Remark on the proper Lorentz transformation of the Dirac equations. M. H. S. P. Res. 11. 1714y Československ. 66, 7 pp. (No. 12, 1950)
In Czech.
A general proof is given of the Lorentz invariance of Dirac's equations for a single electron in the absence of any external electromagnetic field.
MATHEMATICAL REVIEWS

CZECH

531.25

5310. The equations of compatibility and stress functions in tensor form. M. BUDNICKA, *Acta Phys.*, 3, 36-52 (Mar. 8, 1968) In Russian

In this paper some new use of the tensor calculus in elasticity is given, concerning principally the equations of compatibility and the integration of the equations of equilibrium in terms of the stress functions. There is a 200-word summary in English with numerous references to the mathematical expressions in the Russian text.

Erdicka, M.

Historical remarks on reflection of glass with two thin transparent layers.
P. 227
CESKOSLOVENSKY CASOPIS PRO FYSIKU. (Ceskoslovenska akademie ved.
Ustav technicke fysiky) Praha
Vol. 6, no. 2, Mar. 1956

Source: EEAL - LC Vol. 5. No. 10 Oct. 1956

BRDICKA, M.

Contribution to the general form of Beltrami's equation and Papkovic's solution of the problem of the axis of symmetry of the classical theory of elasticity.

P. 231, (Ceskoslovensky Casopis Pro Fysiku) Vol.7, no.3, 1957, Praha, Czechoslovakia

SO: Monthly Index of East European Accessions (EEAI) Vol. 6, No. 11 November 1957

BRDICKA, M.

Brdička, Miroslav. On the general form of the Beltrami equation and Papkovitch's solution of the axially symmetrical problem of the classical theory of elasticity. Czechoslovak J. Phys. 7 (1957), 262-274. (Russian summary) 26

The author shows how to get the explicit form of the Beltrami-Michell equations in orthogonal curvilinear physical components by specialization from their contravariant form. He then shows how to derive the Papkovitch solution for axially symmetrical problems by specialization of the general solution of the equilibrium equations. (Since the author makes a point of correcting attributions, the reviewer remarks that what the author calls the Trenin solution (1953) is due essentially to Love [Elasticity, 2nd ed., Cambridge, 1906, § 188] and what he calls the Finzi-Krutkov solution (1934, 1949) is due to Gwyther [Mem. Proc. Manchester Lit. Philos. Soc. 56 (1911-1912), no. 10.]

C. Truesdell.

alp

CZECHOSLOVAKIA/Acoustics - Sound Waves and Oscillations.

Abs Jour : Ref Zhur - Fizika, No 6, 1959, 13903

Author : Brdicka, Miroslav; Dvorska, Marketa

Inst : -

Title : Elastic Coupling Between Longitudinal and Transverse Vibrations of Isotropic Rods.

Orig Pub : Ceskosl. casop. fys., 1958, 8, No 4, 508-510

Abstract : A theoretical calculation is made, showing the influence of the dimensions of the transverse cross section of round and rectangular rods on the frequency of longitudinal oscillations of these rods. The concept of coefficient of elastic coupling is introduced, and procedure is given for calculating the values of these coefficients.

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AUTHORS: Brdicka, Miroslav, Nováková-Dvorská, Markéta and
Dvořáček, Zbyněk ^{E075/E335}

TITLE: On Two Approximate Methods of Computation of Longitudinal
Oscillation ²⁶ Frequencies of Homogeneous and Isotropic Bars

PERIODICAL: Ceskoslovensky casopis pro fysiku, 1960, Nr 2,
pp 136 - 146

ABSTRACT: The authors review the two best known approximate
methods of computation of longitudinal oscillation
frequencies of rectangular and circular cross-section
bars, namely, those of Rayleigh (The Theory of Sound, Vol
I, London 1926, 251-252) and of Giebe and Blechschmidt
(Ann. d. Phys. 18 (1953), 5, 417, 457). The correction
introduced by Rayleigh improves the frequency equation
only for some of the lower oscillation frequencies but
at higher frequencies there is still a considerable
divergence between the corrected equation and the measured
frequencies. A much better agreement between calculated
and measured frequencies is obtained by the calculations
of Giebe and Blechschmidt, who derived a frequency
equation on the basis of the theory of coupled oscillations

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E073/E335

On Two Approximate Methods of Computation of Longitudinal Oscillation Frequencies of Homogeneous and Isotropic Bars

of systems with a finite number of degrees of freedom. The fields of application of both methods and some of their disadvantages are discussed. The authors also review the work of Mindlin and Herrmann (Columbia Univ., NY, Dept, Civ. Eng., Sept., 1951) (this paper was not available to the authors - only a review of same by Malvern - Appl.Mech. Rev. 5, 1951, 1308) and the work of Mindlin (J. Appl. Phys. 22, 1951, 316), although this does not relate directly to homogeneous and isotropic rods. The paper deals in particular detail with the theories of Rayleigh and Giebe and Blechschmidt, which formed the starting point of experiments by the authors of this paper to obtain a better agreement between calculated and measured frequencies and the result of this work forms the subject of a separate paper. The authors conclude that the relative failure of the Giebe-Blechschmidt theory of longitudinal oscillations for rods of rectangular and circular cross-section can be understood by considering the success of this theory.

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On Two Approximate Methods of Computation of Longitudinal Oscillation
Frequencies of Homogeneous and Isotropic Bars

for thin tubes. In the latter case, the conception of coupling two suitable oscillation systems leads to results which can be obtained from theoretical considerations based on the fundamental dynamic equations of the theory of elasticity and this also explains the good agreement between calculated and measured frequencies. Giebe and Blechschmidt tried to apply this procedure, which was successful for thin tubes, for rods of circular and rectangular cross-section. The thus obtained results are not sufficiently related with the theory of elasticity although in the first series of experiments the measured values of the frequencies of rods of longitudinal and circular cross-section were in good agreement with the values predicted by the coupling theory. It appears that the main difficulty of their theory is their adherence to the dead zone, which is contradicted even by their own measurements. The question arises whether addition of higher frequencies of transverse oscillations would not be helpful in the case; from the point of view of the

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E073/E335

On Two Approximate Methods of Computation of Longitudinal Oscillation
Frequencies of Homogeneous and Isotropic Bars

Giebe-Blechscht theory the value of the coupling parameter will become important since according to the conception of both authors the character of the coupling would no longer be the same. The authors of this paper believe that the question of coupling parameters is more complex than appears from the Giebe-Blechscht theory, according to which the magnitude of the coupling parameters does not depend on the class of longitudinal oscillations and is equal for all the theories. Its determination from limit frequencies is also doubtful in spite of the fact that the results have justified this procedure to some extent. Thus, the theory of Giebe and Blechscht (or the theory of Giebe and Scheibe) was fully successful as long as the results obtained were equal to those obtained by the theory of elasticity, i.e. for thin-walled tubes. It appears that by introducing coupling between systems with finite degrees of freedom the laws of the theory of elasticity are not fully adhered to in the case of solid

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EQ73/E335

On Two Approximate Methods of Computation of Longitudinal Oscillation Frequencies of Homogeneous and Isotropic Bars

rods. Therefore, the authors have attempted to derive approximate equations for the frequencies of oscillation of solid rods by another method described in an earlier paper (Čs.Čas.fys. 8(1958), 508). As starting equations

$$e_{22} = -\sigma e_{11}, \quad e_{33} = -\sigma e_{11} \quad (2.8)$$

$$\frac{\partial v}{\partial y} = -\sigma \cdot \frac{\partial u}{\partial x}, \quad \frac{\partial w}{\partial z} = -\sigma \cdot \frac{\partial u}{\partial x} \quad (2.9)$$

were used, where e_{ij} are the strain components and $u_2 \equiv v$ and $u_3 \equiv w$ are the components of the elastic displacements in the direction of the y and z axes; the equations were generalised, i.e. instead of the Poisson constants σ , the two parameters φ and ψ were introduced, which as a general rule vary with the

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E073/E335

On Two Approximate Methods of Computation of Longitudinal Oscillation
Frequencies of Homogeneous and Isotropic Bars

order of the oscillations and for their determination a condition is introduced that the appropriate frequency assumes a steady-state value. Under certain simplifying assumptions the authors succeeded in obtaining equations for frequencies, the results of which are approximately in as good agreement with the measured results as results calculated according to the Giebe and Blechschmidt theory and there is the advantage that this method does not rely on the conception of a dead zone. There are 18 references, of which 9 are English, 8 German and 1 Czech.

ASSOCIATIONS: Matematicko-fyzikální fakulta University Karlovy, Praha
(Department of Mathematics and Physics, Charles University, Prague)

Výzkumný ústav matematických strojů, Praha
(Computer Research Institute, Prague)

Ústav technické fyziky ČSAV, Praha

Card6/6 (Institute of Technical Physics, ČSAV, Prague)

SUBMITTED: December 1, 1959

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B112/B202

16.5000

AUTHOR: Brdička, Miroslav, Docent, Doctor

TITLE: Comments on the paper by František Nožička "On a model in the classical two-body problem"

PERIODICAL: Aplikace Matematiky, v. 5, no. 1, 1960, 30-39

TEXT: The author refers to the paper by F. Nožička: O jednom modelu v klasickém problému dvou těles, Aplikace matematiku 5 (1960), no. 1 (Ref.1), in which a geometrical interpretation of the classical two-body motion, especially of the revolution of a mass point M_2 with mass m_2 about a homogeneous sphere M_1 with the radius R and the mass m_1 is discussed. In the present paper the author derives some results obtained by Nožička by the conventional method used in classical physics. He proceeds from

Binet's equation: $\frac{d^2 u}{d\varphi^2} + u = \frac{\kappa m_1}{c^2}$, where $u = 1/r$, κ is the gravitational constant and $c = r^2 \dot{\varphi}$ is constant according to Kepler's second law. This

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Comments on the paper...

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equation has the following solution:

$$r = \frac{\frac{a_0^2}{\kappa m_1}}{1 + \frac{A_0}{\kappa m_1} \cos(\varphi + \gamma)}$$

A can be determined from the initial values r_0 and v_0 of the distance and

the velocity of M_2 : $A^2 = \frac{v_0^2}{c^2} - \frac{2\kappa m_1}{c^2} \cdot \frac{1}{r_0} + \frac{\kappa^2 m_1^2}{c^4}$. If ψ_0 is the angle between the vectors \vec{r}_0 and \vec{v}_0 , $c = v_0 r_0 \sin \psi_0$ holds. To determine the boundary line of the two domains in the trajectory plane of M_2 (i.e., in the r, φ plane) within which the end point of \vec{v}_0 is to lie in order that M_2 hits or passes by the sphere, the author writes down:

$r_0 = R + h$, $\eta = v_0 \sin \psi_0$, $\xi = v_0 \cos \psi_0$ and obtains the equation of a

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Comments on the paper...

hyperbola for the desired boundary line: $\frac{(R+h)(2R+h)}{2xm_1R} \eta^2 - \frac{R(R+h)}{2xm_1h} \xi^2 = 1$

which is in agreement with that obtained by Nožička. There are 2 figures and 9 references: 5 Soviet-bloc and 2 non-Soviet-bloc.

ASSOCIATION: Matematicko-fyzikální fakulta Karlovy university, Praha
(Division of Mathematics and Physics of Charles University,
Prague)

SUBMITTED: May 22, 1959

Card 3/3

BRDICKA, R.; KREN, V.; FRENZL, B.; STARK, O.

Interlineal relationships in rats. Folia biol. 8 no.6:352-359 '62.

1. Department of General Biology, Faculty of General Medicine,
Charles University, Prague.
(SKIN TRANSPLANTATION) (ERYTHROCYTES) (ANTIGENS)

BRDICKA, R.

Result of ten years' work of the Czechoslovak Academy of
Sciences in chemical science. Chem listy 56 no.11:1281-1295
N '62.

CA

3

EXT AND (NO) ORDERS

PRELIMINARY AND PROPERTIES INDEX

The automatic recording of extinction curves of absorption spectra. R. BRDIČKA AND M. PAVLÍK. *Collection Czechoslov. Chem. Comm.* 2, No. 3, 120 R(1930).—Two mech. devices are described which, when fitted to a spectrograph, enable continuous, automatically recorded absorption spectra to be obtained, similar in form to the typical Hartley-Baly curves. The first mechanism, operated by clock work, gives the inner, vertical tube of a Baly absorption vessel a continuous vertical motion in such a manner that the thickness of the absorbing layer of the soln. varies logarithmically with time. The essential part of this device is 2 segments having the shape of a logarithmic spiral, mounted on a uniformly rotating axis. Two vertical bars moving over the edges of the segments translate the movement to the inner tube of the absorption vessel. The absorption vessel consists of a vertical tube, widened at the top, and an inner tube which slides inside the other, both tubes having plane parallel ends. The change in thickness of the soln. layer is observed either on a scale connected to the vertical bars or on a circle mounted on the axis of the segment. The second mechanism governs the uniform, continuous motion of the photographic plate receiving the spectrum. (Three photographs of app. and 2 typical absorption spectra are given.) In this manner absorption spectra of all required thicknesses can be recorded in 30 min. The app. can be used to obtain photographs of absorption spectra by the usual Hartley-Baly method, and also for the quant. detn. of the abs. values of the mol. extinction coeffs. by Weigert and Hyman's method. E. B. SANIGAR

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

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Investigations on the constitution of the aqueous pink and blue cobaltous chloride solutions. 1. Electrodeposition at the dropping mercury cathode. R. BADIČKA. *Collection Czechoslov. Chem. Comm.* 2, No. 8, 480-501 (1930).—The deposition of Co from pink and from blue solns. of CoCl_2 has been studied with the polarograph. The blue solns. contained CaCl_2 , and the results show that an increase in the concn. of CaCl_2 causes the deposition potential of Co to become more positive. The change of deposition potential with diln. was found to be too large when CaCl_2 was present, approaching the normal value as the CaCl_2 became stronger (e. g., 10 N). From the curves obtained, the ionic valency of Co in the pink solns. was calcd. to be $\frac{1}{2}$, while it was 2 in the blue solns. Agreeing with this, Co has been found to deposit reversibly only from the blue solns. (i. e., from solns. contg. about 10 N CaCl_2) at room temp. or from less concd. (e. g., 5 N) CaCl_2 solns. at temps. near 100° . The cathodic deposition potential of Co from the blue solns. is about 0.3 v. more positive than that from the pink solns. with equal Co content. This indicates a great increase in the activity of the Co^{++} ions in the blue solns. The irreversible deposition of Co from the pink solns. is supposed to be due to slow dehydration of the pink hydrated ions; the reversible deposition from the blue solns. is thought to be facilitated by the ease of splitting of the blue complexes into dehydrated free Co^{++} ions.

HOWARD B. SANIGAR

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PROCESSING AND PROPERTY INDEX																									
1ST AND 2ND EDITIONS													3RD AND 4TH EDITIONS												
<p><i>ca</i></p> <p>The deformability of ions. R. Hapka. <i>Chem. Listy</i> 24, 374-9, 398-403(1930). - The Fajan's theory is used to explain many phys. phenomena and chem. properties; the theory remains on a qual. basis but embodies a phys. concept of atoms and ions. The theory cannot be used to explain the color of salts as an absorption of visible radiations due to deformed anions, for the electronic system of cations also absorb in this range. Adsorption may be associated with the deformability of ions: the adsorption depends upon the potential at the interface of two phases. The potential originates in the Helmholtz double layer and depends upon the distance between the opposite charges in the layer. The more deformable ions permit a close approach of the electrons in a shell and force the pos. layer to approach the neg. layer. This increases the adsorption potential and consequently the adsorption.</p> <p>FRANK MARROW</p>																									
<p>ASSN. VLA. METALLURGICAL LITERATURE CLASSIFICATION</p> <p>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100</p>																									

<p>187 AND 188 SERIES</p> <p>PROPERTIES AND PROPERTIES INDEX</p> <p><i>ac</i></p> <p>Polarographic studies with the dropping mercury cathode. XXII. Hydrolysis of cobaltous chloride. R. BARTUSKA (Coll. Czech. Chem. Comm., 1931, 3, 398-408; of. A., 1930, 1254).—The current-voltage curves registered polarographically, when aq. solutions of CoCl_2 are electrolysed using the dropping Hg cathode, show an increase in current at approx. —1.05 volt, about 0.2 volt below the increase due to the deposition potential of Co. This gives a "wave" in the curve which becomes more pronounced when the solution is warmed, or when a small amount of alkali hydroxide is added to the solution. The wave disappears entirely after acidification to $\text{pH} \approx 4$. The first increase in current is probably due to the deposition of Co from the ion $[\text{Co}(\text{H}_2\text{O})_6\text{OH}]^+$, the hydrated form of the ion CoOH^+. At the second increase $[\text{Co}(\text{H}_2\text{O})_6]^{2+}$ ions are deposited. This is possible if the equilibrium $[\text{Co}(\text{H}_2\text{O})_6]^{2+} + \text{H}_2\text{O} \rightleftharpoons \text{H}^+ + [\text{Co}(\text{H}_2\text{O})_6\text{OH}]^+$ is only slowly established, so that each kind of ion has its own deposition potential at which the complex ion is torn into the simple ions by the action of the strong electric field at the surface of a polarized electrode. M. S. BURN.</p>		<p><i>a-1</i></p>
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1ST AND 2ND GROUPS		PRECEDENCE AND PRIORITY INDEX	
<p>CR</p> <p>4</p>		<p>XXXI. New test for proteins in the presence of cobalt salts in ammoniacal solns. of ammonium chloride. R. HANUSKA, Collection Czechoslov. Chem. Communications 5, 112 (in English) (1933); cf. C. A. 26, 3443.—Upon electrolysis of solns. contg. CoCl_2 or cobaltamines. NH_4Cl and proteins of various origins, two characteristic waves (the 1st being twice the height of the second) were observed, not coinciding with the protein wave found by Herrvorský and Habscha (C. A. 26, 4246) on electrolysis of protein solns. in NH_4Cl only. The dependence of the heights of these new protein waves on the concn. of protein, Co, NH_4 ions and NH_4 ions, was studied and in each instance, when the concn. of only one compd. was varied, could be represented by a curve approaching a limiting value as the concn. of the compd. being varied increased. To get the protein waves in presence of Co, the NH_4 ion cannot be replaced by any other. Increasing temp. gave only slight increase of the protein waves, in agreement with the increase of the Co-deposition current caused by more rapid diffusion at higher temps., and also caused the change from the 1st to the 2nd wave to disappear gradually, the 1st growing at the expense of the 2nd. Centrifuged solns., after coagulation of the proteins, gave under the same conditions the same qual. effect as untreated solns., and the same quant. results when the soln. of protein coagulated was sufficiently dil. and when HOAc was used for coagulation. Identical solns. contg. amino acids in $5 \times 10^{-4} M$ concn. instead of protein, did not give analogous results on the polarograph curves, except cystine, which enhanced the characteristic protein effect. Since $2 \times 10^{-4} \text{ mol/l}$ cystine gave an effect 500 times greater than that corresponding to its simple reduction, it is concluded the effect is a catalytic one, the catalyzed reaction being H deposition. The new protein waves can be correlated with the presence of cystine nuclei in proteins. By comparing the effects of cystine and proteins, the constituent of protein producing the polarographic effect is concluded not to be as simple as cystine, or as complex as a protein molecule.</p> <p>EDWARD D. SANIGAR</p>	
<p>429-554 METALLURGICAL LITERATURE CLASSIFICATION</p>			

PROCESSING AND PROPERTIES INDEX

Polarographic studies with the dropping-mercury cathode. XXXIII. Activation of hydrogen in the sulfhydryl group of some amino acids in cobalt salt solutions. R. BERNICKA. Collection: *Czechoslov. Chem. Communications* 8, 145-64(1933); cf. C. A. 26, 3144.

The catalyzed deposition of H at the dropping-Hg cathode in the presence of cystine, cysteine, thioglycolic acid, cysteic acid, and glutathione (disulfide and thiol forms) was studied in ammoniacal solns. of CoCl_2 in NH_4Cl . From the height of the cystine reduction wave it was ded. that 2 electrons are used in the reduction of 1 cystine mol. This reduction occurred at a more pos. cathodic potential than that of the catalytic deposition of H; this suggests that the catalytic effect is due to the reduction product cysteine, and this was confirmed by addn. of cystine to the Co salt solns. NH_4 was unnecessary for the development of the catalytic wave although it increased the rounded max. Further, the max. of the catalytic wave increased simultaneously with that of Co deposition on addn. of NH_4 . The catalytic wave was not given in solns. of cobaltic, but only in solns. contg. cobaltous ions. The conclusion that the catalytic wave was due to the sulfhydryl group of cysteine was supported by the results given by the other compounds above. To explain this catalytic reaction the coordinative binding of the sulfhydryl group in complexes of cobaltous ions with thio acids is assumed to give increased protonic activity of this group, causing an increased distance between the H^+ and the pos. nucleus of the S atom. The dipole, $-(\text{S}-\text{H})^+$, is transported with the cobaltous ions into the negatively charged interface between Hg and H_2O and remains adsorbed there. The potential gradient there deforms the dipole and finally breaks the S-H linkage. This discharged H atom is replaced by H from H_2O , the process thus continuing. For the free progress of the reaction $-\text{S}^- + \text{H}_2\text{O} \rightleftharpoons -\text{SH} + \text{OH}^-$, the OH ions must be removed from the cathode interface: this can be done by NH_4^+ ions, or in any suitable buffer mixt. A scheme of oxidation of Co bis-cysteinate is proposed in accordance with the coordinative binding of the sulfhydryl group. The catalytic effect described is highly characteristic and can be used for the detn. of thio acids.

E. B. S.

METALLURGICAL LITERATURE CLASSIFICATION

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Polarographic studies with the dropping-mercury cathode. XXXIII. Micro-determination of cystine and cystine in the hydrolyzates of proteins, and the course of the protein decomposition. R. Břídka. <i>Collection Czechoslov. Chem. Communications</i> 5, No. 6, 238-241(1933); cf. C. A. 27, 3144, 3872. — The catalytic effect of cystine in buffered solns. of CoCl_2 on H deposition at the dropping Hg cathode can be used for the microdetn. of cystine in protein hydrolyzates. Cystine was detd. in wool, human hair, egg albumin, blood albumin, serum, serum albumin and serum globulin, the results agreeing with literature data. The solns. should contain preferably $5 \times 10^{-4} - 10^{-4}$ g.-mol. of cystine (0.012-0.24 mg. cystine in 10 cc. H_2O), the accuracy of a single detn. then amounting to $\pm 8\%$ of the actual cystine content. The detn. of cystine in 0.0005 g. of human hair is described; coarse, firm human hair was found to contain less cystine than soft, fine hair. In a suitable buffer soln. contg. cobaltamine, the cystine formed during protein hydrolysis had no influence on the polarographic curve, but the intermediate product of protein decompn. gave a considerable effect. This fact was used to investigate the course of the hydrolysis of proteins having a cystine nucleus. The amt. of intermediate product in the soln. attained a max., then decreased again with continued hydrolysis. The kinetics of this process are briefly discussed, and the velocity consts. of the formation and decompn. of the intermediate product in the hydrolysis of wool are roughly detd.																									
Edward R. Sanigar																									
ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION																									
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<p>1A</p> <p>Polarographic determination of the effect of air on solutions of arspenamine. RUDOLF REPIČKA. <i>Casopis Českoslov. Ládrovnicků</i> 13, 81-82(1933). The amt. of Na and of traces of oxidation products in arspenamine can be detd. polarographically. WILLIAM J. MURK</p>																									
<p>ASW-51A METALLURGICAL LITERATURE CLASSIFICATION</p>																									
<p>RECORD #2</p>																									
<p>RECORD #2</p>																									

COMMON ELEMENTS	PROCESSES AND PROPERTIES INDEX	1ST AND 2ND ORDERS	3RD AND 4TH ORDERS
<p>CA</p>	<p>Polarographic studies with the dropping-mercury cathode. LV. The influence of air on solutions of arsenamine derivatives. R. Brdicka. Collection Czechoslov. Chem. Communications 7, 457-66(1935).-- Polarographic current-voltage curves were employed to est. the toxic products of oxidation formed by the action of atm. O on arsenamine derivs. The O oxidizes the group --As:As-- to the group --AsO, which greatly increases the toxicity. The method may serve for the standardization of arsenamine preps. and might control the toxicobiol. test. The chief advantage of the method is that very small traces as well as large amts. can be detd. LVI. Investigation of purity of ethyl ether. R. A. Gosman. Ibid. 467-75.--By means of an aq. LiOH soln. satd. with Et₂O the peroxide and aldehyde impurities formed in the Et₂O by atm. O were detd. from current-voltage curves. The peroxide substance was electroreduced at an e. m. f. of 1.3 v. and the aldehyde substance at 1.8 v. From the height of the "waves" the amts. of these impurities were estd. 0.25% H₂O₂ and 1% AcOH were easily detd. The polarographic reaction was sensitive enough to show "waves" when ordinary chem. tests failed. The partition coeff. K of these substances between Et₂O and H₂O was detd. For the peroxide impurity K = 0.46 with 0.011% in the Et₂O and for the aldehyde K = 0.03 with 0.008% in the Et₂O calcd. as AcOH. The aldehyde substance forms from the decompn. of the primary oxidation product, i. e., from the peroxide substance.</p> <p style="text-align: right;">W. George Parks</p>	<p style="text-align: right;">17</p>	
<p style="text-align: center;">ADDITIONAL METALLURGICAL LITERATURE CLASSIFICATION</p>			
<p>RECENT REVISIONS</p>	<p>1</p>	<p>2</p>	<p>3</p>
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<p>97</p>	<p>98</p>	<p>99</p>	<p>100</p>

117 AND 118 SYMBOLS		PROCESSING AND PROPERTY MODES		119 AND 120 SYMBOLS	
BC				A-1	
<p>Polarographic studies with the dropping mercury cathode. LXXI. Effect of buffer solutions on the reaction of proteins. R. Baudouin (Coll. Czech. Chem. Comm., 1936, 8, 366-376).—The catalytic effect of ovalbumin, peptone, and cysteine in lowering the over-potential of the deposition of H ions has been investigated in buffer solutions. The presence of cysteine nuclei in the protein is considered essential for the catalytic action. C. R. H.</p>					
ASTM-ILA METALLURGICAL LITERATURE CLASSIFICATION					
117 AND 118 SYMBOLS		119 AND 120 SYMBOLS		117 AND 118 SYMBOLS	
117 AND 118 SYMBOLS		119 AND 120 SYMBOLS		117 AND 118 SYMBOLS	

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131 AND 132 (1948)

PROCESSES AND PROPERTIES INDEX

2-1

Polarographic studies with the dropping mercury electrode. IV. Influence of circuit resistance on maxima of current-voltage curves. R. Ruzicka (Coll. Czech. Chem. Commun., 1938, 9, 410-433; cf. this vol. 430).—The current max. obtained with 0.01N-Hg(NO₃)₂ in 0.005N-HNO₃ decreases as the resistance, R_e , external to the electrolyte is increased. Oscillographically recorded current-time curves for the formation of single drops show that the cathode is unpolarizable at $< a$ sp. c.m.f. and yields large currents or the c.m.f. With c.m.f. $>$ the sp. val., the Hg drop is polarized at all stages of growth. The polarization increases linearly with c.m.f., so that the current always reaches the same val. corresponding with the "diffusion current." The discontinuous fall of current at a polarographic max. occurs at the same c.m.f. whatever the val. of R_e and is attributed to the polarization of drops at the moment of formation. If R_e is increased, however, the drop becomes depolarized during growth unless the c.m.f. is sufficiently raised, in which case the diffusion current is always attained. J. G. A. G.

COMMON VARIABLE INDEX

COMMON ELEMENTS

OPEN

MATERIALS INDEX

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

SECOND DIVISION

SECOND WAY ONLY GIVE

EXHIBITION

EXHIBIT ONE ONLY ASL

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1ST AND 2ND ORDER										3RD AND 4TH ORDER									
PROCESSES AND PROPERTIES INDEX																			
<p><i>ca</i></p> <p>Polarographic studies of the denaturation and proteolytic cleavage of proteins. R. Hrdlička and J. Klumpar. <i>Časopis Českoslov. Lék. přírod.</i> 17, 234-44(1937); <i>J. C. A.</i> 32, 91231. The action of protein contg. cystine nuclei in buffered Cu salt solns. in producing a double wave in the polarogram is discussed. Increase of height of this double wave with concn. of protein tends to reach a limit. The action is primarily due to the catalytic evolution of H from the SH groups ascribed to their coordinated bond with Cu, S-S groups being reduced to SH at the dropping Hg cathode. Distinction between SH and S-S groups is made by adding iodoacetate, when the SH group of cystine is inactivated and the polarographic effect removed, whereas the S-S group of cystine remains unchanged and the polarographic effect persists. Part of the S-S and SH groups of native protein mols. is masked and liberated when the mol. is denatured. It is confirmed that only the free protein S-S and SH groups react polarographically since the height of the protein double wave increases proportionally with addn. of alkali hydroxide. Denatured protein gives a considerable increase to the limiting height of the protein double wave. The height of protein wave is proportional to the concn. of protein mols. at the cathode interface and when this is said, no further increase in the double wave can take place. Denaturation liberates more active groups and the limit can increase. Three methods based on the above principle are given for the estn. of the proteolytic activity of pepsin. B. C. P. A.</p> <p><i>11A</i></p>																			
<p>ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>																			
<p>STANDARD #1</p>										<p>STANDARD #2</p>									
<p>STANDARD #3</p>										<p>STANDARD #4</p>									

ca

Some problems of modern reaction kinetics. Rudolf
Briggs. *Chem. Listy* 82, 40-2, 96-9, 118-20, 140-50,
173-4 (1938).—In a condensation of 7 monographs B.
treats mathematically the potential energies and the
kinetics of chem. reactions in gaseous systems, in soln.,
of org. compds., and of chain reactions. F. M.

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CA

Polarographic studies with the dropping mercury elec-
trode. LXXXV. Limiting current of the catalyzed elec-
trode process. R. Brdicka. Collection Czech. Chem.
(COMMUN. 11, 614-25(1939)).—See C. A. 34, 5761.
Clarence F. Hinkley

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

1901-1939

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1ST AND 2ND ORDERS													2ND AND 3RD ORDERS												
PROCESSING AND PROPERTIES INDEX																									
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OPEN WATER-ALL MOSES													<div style="text-align: center; font-size: 2em; font-weight: bold;">C</div>												
<div style="text-align: center;"> <p>1 The constitution of colloidal particles. Rudolf Bredig. <i>Comptes Rendus Académie 10, 226-9 (1909); Chem. Zentr. 1909, II, 3316. --General theoretical considerations on the structure of colloidal particles. B. J. C.</i></p> </div>																									
<div style="text-align: center;"> <p>ASSEMBLY METALLURGICAL LITERATURE CLASSIFICATION</p> </div>																									
<div style="text-align: center;"> <p>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100</p> </div>													<div style="text-align: center;"> <p>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100</p> </div>												

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

4

The limiting current in the catalytic reduction at the dropping mercury cathode. Rudolf. Brdicka. *Chem. Listy* 34, 58-64 (1940).—The diffusion currents of normal reducing processes occurring at the dropping Hg cathode are proportional to the concn. of the active reducing particles. The limiting currents of a catalyzed electroreduction depended not on the concn. of particles participating as catalysts but on the function (which can be derived from the Langmuir adsorption isotherm): $i = i_0 \omega c / (1 + \omega c)$, where i_0 is the max. height of the double wave, c is the concn. of CoCl_2 , and ω is a coeff. The function held for exptl. values obtained during the polarographic reduction of albumin in the presence or in the absence of Co. The results indicate that albumin is the carrier of the catalytic-active groups (such as the SH group) which react in the interphase and remain in complete adsorption equil. with albumin in soln. The mechanics of this catalyzed electroreduction have been ascribed to the slow formation of mol. H which diminishes the overvoltage of H or of the H_2O_2 .

Frank Mareš

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

4

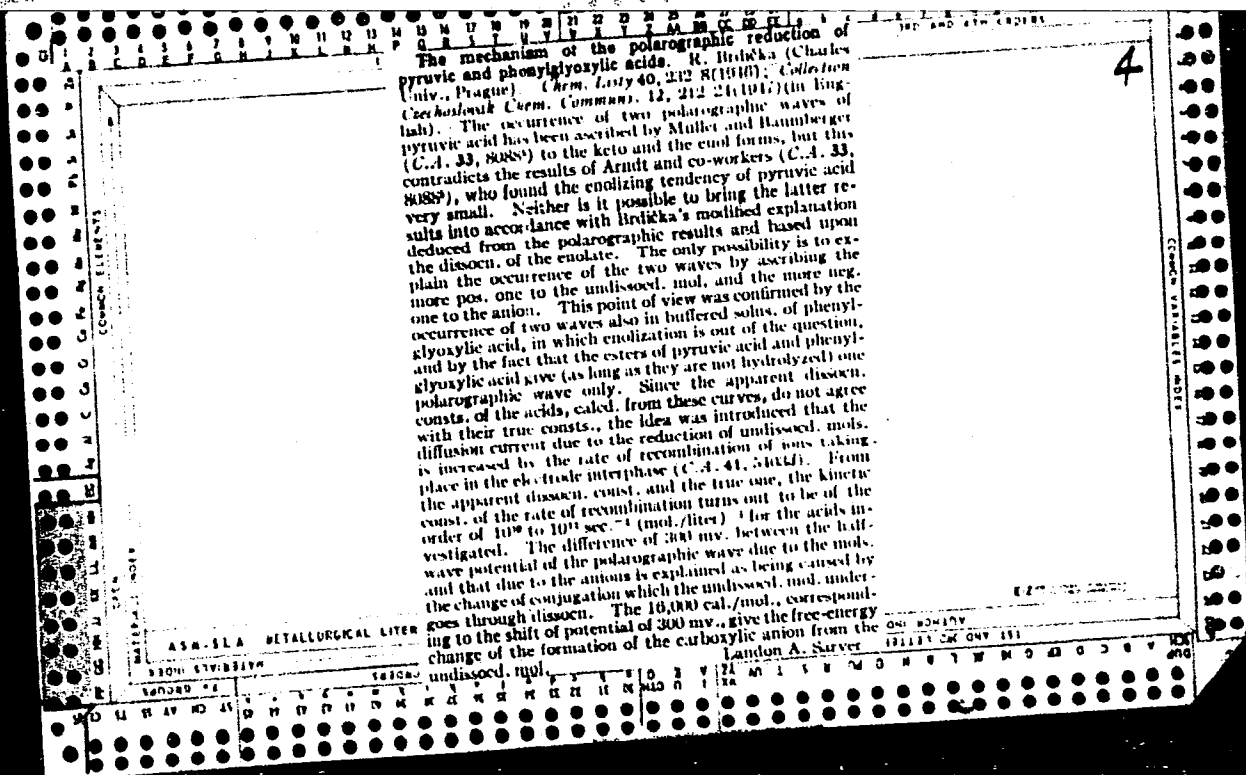
Rate of recombination of ions derived from polarographic limiting currents due to the reduction of acids. R. Bředička and K. Wiesner (Charles' Univ., Prague, Czechoslovakia). *Věstník Král. les. spol. nauk, Pt. Czechoslovakia*, No. 18(1943); *Collection Czechoslov. chemist. Commun.* 12, 138-49(1947)(in English). A discussion of the conditions which influence the wave heights resulting from the sep. reduction of the unionized (I) and ionized (II) forms of certain acids at the dropping-mercury electrode. It is pointed out that the more pos. wave represents the concn. of I only if the rate of reaction between II and H^+ is very slow. Since this is usually not the case the more pos. wave increases at the expense of the more neg. wave. Equations have been derived which express these conditions quantitatively and as a function of the pH of the soln. and the pK of the acid. On the basis of this it should be possible to calc. the velocity const. k of the reaction $A^- + H^+ \rightarrow HA$, or the product μk , where μ represents the thickness of the interfacial layer in which the reaction takes place. It is further shown that by evaluating the effects of varying rates of flow of Hg from the capillary the effects of varying rates of the dissocn. const. of the acid could be calc'd.

OTTO H. MÜLLER

CA

Polarographic investigation of tautomeric equilibria. *Rudolf Budzik. Chem. Listy 39, 25-27(1945)*.—Correlations between tautomeric equilibrium and polarographic curves of reducible compounds were established. A new mathematically supported theory was based on the eqns. of Müller and Baumberger (*C.A. 33, 8088*) which were duplicated. A polarographic wave corresponding to the 2-electron reduction of pyruvic acid (I) forms in the range of pH 6.5-7.5 with 2 waves. The height of the original more pos. wave decreases with increasing pH, and the height of the new more neg. wave increases. The sum of the heights of the 2 waves is const. and corresponds to the total concn. of I. Considering the equil. between the keto and enol forms (tautomeric const. K_T) and the dissecn. of the enol (equil. const. K_a) the following equation was derived: $pH = pK + \log \frac{[enolate]}{[keto] + [enol]}$, where K expresses the over-all acidity of the system and corresponds to $K = (K_a K_T) / (1 + K_T)$. Theoretical and expl. evidence proved that the more pos. wave corresponds to the reduction of the tautomers and the more neg. wave to the reduction of the enolate ion. This is in accordance with small enolization tendency of I. I has a pK value of 6.15. Essentially the same results were obtained in the keto-enol systems of calcichonic (II), (hydroxymethylene)cyclohexanone (III) and EtO_2CCH_2COPh (IV). II showed a pK value of 10.55, which is close to the values for phenols. The hydroxymethylene form prevails in the equil., as may be judged from the analogous polarographic behavior of II and salicylaldehyde. The pK value of III is 6.37. It produced a 3rd wave in acidic solns. which is without an explanation. The pK of IV is 7. $AcCH_2CO_2Et$ is not reduced and cannot be examd. polarographically. It was possible to discriminate between the ionized form (enolate ion) and the unionized forms (keto + enol), but not between the keto and enol forms. Milos Hudlicky

1ST AND 2ND ORDER		PROCESSIES AND PROPERTIES INDEX		3RD AND 4TH ORDER	
CA		<p>Polarographic determination of the rate of the reaction between ferrohem and hydrogen peroxide. H. Hrdicka and K. Wiesner (Charles Univ., Prague, Czechoslovakia). <i>Collection Czechoslov. Chem. Commun.</i> 12, 39-63(1947) (in English); <i>Chem. Listy</i> 40, 66-70(1948).—The known shift of part or all of the polarographic H_2O_2 wave toward more pos. potentials in the presence of hemin has been analyzed in detail, and equations have been derived to account quantitatively for the observed phenomena. By expts. it was found that the half-wave potentials of the ferrohem-ferrohem system at different pH values were in good agreement with known oxidation-reduction potentials of this system. It was also established that the polarographic O wave varied with the flow of Hg from the capillary in accordance with the Ilkovic equation. A study of the dependence of the catalyzed H_2O_2 wave on the concn. of ferrohem made it possible to calc. the quantity μk, where μ is the thickness of the layer in which the catalytic reaction takes place, and k is the velocity const. Variation of this μk value with pH was found to follow the disocn. curve of H_2O_2. This led to the conclusion that only undissocd. H_2O_2 moles. take part in the reaction and combine with ferrohem. On the assumption of a μ value of 10^{-7} cm. a limiting value of 10^{11} was found for the velocity const. k. The effect of Hg flow on the catalytic wave was in agreement with theory. A similar catalytic H_2O_2 reduction was further found in salicylaldehyde ethylenediamine ferrichloride. Otto H. Müller</p>		11A	
ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION					
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COMMON ELEMENTS		COMMON VARIANTS		COMMON VARIANTS	
MATERIALS INDEX		MATERIALS INDEX		MATERIALS INDEX	



15

B

Rate of Recombination of Ions Derived from Polarographic Limiting Currents Due to the Reduction of Acids. (In English.) R. Brdicka and K. Wiscner. Collection of Czechoslovak Chemical Communications, v. 12, Mar. 1947, p. 138-149.

A fundamental study of polarographic reactions is made, and equations are derived which allow calculation of certain factors such as reaction-rate constant, thickness of interface layer, etc. Change of limiting currents with outflow velocity of mercury is discussed and the possibility of determining dissociation constant of the acid on the basis of polarographic measurements is pointed out.

17. REF. NO. 28111
POLAROGRAPHIC LIMITING CURRENTS

2

Polarographic limiting currents of formaldehyde as a measure of its dehydration rate. K. Vecely and H. Brdicka. Collection Czechoslov. Chem. Commun. 12, 813-82(1947) (in English); cf. Weisser, C.A. 37, 6803; Brdicka, C.A. 38, 141. Polarographic limiting currents on buffered solns. of CH_2O show an exceptional dependence on pH. At neutrality the limiting current is less than $1/\mu$ and at a pH of 13.5 less than $1/\mu$ of the diffusion current as calcd. by the Ilkovic equation (calcn. based on the diffusion coeff. of MeOH and on the reduction of CH_2O with 2 electrons). In dil. aq. soln. CH_2O exists mainly in the hydrated form which cannot be reduced polarographically. The limiting current depends therefore on the rate of dehydration of methyleneglycol, since the free aldehydic form can be reduced. The kinetic consts. for the basic catalysts of the dehydration were calcd. (on the basis of one mole with the >C=O bond for 10,000 moles with the —C—O— bond). They are $K_{\text{OH}} = 1.5 \times 10^4$, $K_{\text{HPO}_4} = 36$, and $K_{\text{H}_2\text{PO}_4} = 1.8 \times 10^{-10}$. The acid dissociation const. of CH_2O at 20° is 4×10^{-14} . Acid catalysis of dehydration could not be fully investigated because of the interference of H^+ waves in acid solns. Results confirm V. and B.'s kinetic conception of the limiting current. Gerald Reed

418-164 METALLURGICAL LITERATURE CLASSIFICATION

10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									
RECEIVED AND PROPERTY INDEX																			
<p>Measurements of quantities concerning the adsorption of certain reducible compounds or their reduction products at the dropping-mercury electrode. R. Brdicka (Charles Univ., Prague). <i>Collection Czechoslov. Chem. Commun.</i> 12, 522-40(1947); cf. C.A. 37, 5061¹⁴.—B. has generalized the adsorption theory previously proposed to explain the anomalous polarograms of certain reversible org. oxidation-reduction systems. Theoretically the polarographic curve should have the same shape as the corresponding potentiometric titration curve and the half-wave potential and normal oxidation-reduction potential should be the same. If one of the oxidation-reduction forms should be adsorbed on the Hg drops, the free energy change which occurs will shift the polarographic wave to more neg. potentials if only the oxidized form is adsorbed; and to more pos. values if only the reduced form is adsorbed. At low concns. of the oxidation-reduction system the Hg drops will be unsatd. and a single wave will appear. Above a certain concn. 2 waves appear: an "anomalous" wave and a normal wave. The height of the "anomalous" wave is independent of concn., since it corresponds to satn. of surface of the drops with adsorbed compd. It will follow the normal wave at more neg. values if the oxidized form only is adsorbed (e.g. phenosafranine), or precede the normal wave at more pos. potentials if the reduced form only is adsorbed (e.g. methylene blue and lactoflavin). The height of the "anomalous" or adsorption curve is a measure of the adsorption current from which can be evaluated the max. no. of adsorbed mols. per unit area of drop surface. From the difference between the half-wave potentials of the adsorption and diffusion currents the Hückel adsorption coeff. can be calcd. If some plausible value is assumed for the vol. of the adsorbed mols. the free energy of adsorption can be detd. The adsorption current varies directly with the height of the Hg reservoir. Finally, if both oxidation-reduction forms are adsorbed equally, the polarogram should be normal. Data from previous articles are used to test the theory.</p> <p style="text-align: right;">David Lewis</p>																			
<p>ASB-51A METALLURGICAL LITERATURE CLASSIFICATION</p>																			
<p>GROUPS</p>										<p>ALPHABETIC</p>									
<p>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</p>										<p>A B C D E F G H I J K L M N O P Q R S T U V W X Y Z</p>									

C A

Decomposition of lactoflavin by light. Rudolf Brdicka (Bulovka Hosp., Prague). *Collections Czechoslov. Chem. Commun.* 14, 130-44(1949)(in English). -- Light decomposition of lactoflavin (I) was studied polarographically to compn. of photolysis which were oxidized or reduced at the dropping-Hg electrode. Solns. of I, freed of air by bubbling in H₂, were irradiated with a Hg lamp for given time intervals and dil. in 1:5 ratio with buffer solns. over the pH range 1.8-12. Lumichrome (II) appeared over the entire pH range and showed a reduction wave distinct from that of I. In some cases the amt. of II was as great as 50% of the original amt. of I, owing to the change of half of I to dihydroflavin (III). Different polarographic findings were obtained in slightly alk., neutral, and acid media. Two new waves with heights equiv. to that of II and with half-wave potentials of -1.005 and -1.85 v., resp., were detected in a soln. of pH 12. The first wave was due to CH₂O, and from the potentials of the corresponding sugar homologs, the second was attributed to erythrose; these resulted from decomn. of the dehydrogenated sugar chain, and their formation suggested the sugar decomn. might have occurred as:

$$\text{:NCH}_2\text{CO(CHOH)}_4\text{CH}_2\text{OH} + \text{H}_2\text{O} \rightarrow \text{:NCH}_2\text{OH} + \text{CHO(CHOH)}_4\text{CH}_2\text{OH}$$

$$\text{:NCH}_2\text{OH} \rightarrow \text{HCHO}$$

 accompanied by reduction of the flavin as indicated by a shifting of the wave of I into the range of anodic currents. The reaction mechanism suggested is capture of a H atom from the second C atom of the sugar chain by N atom I with formation of free radicals in the nucleus and in the side chain, followed by union of the free radicals to give a mol. with a nucleus of III and a side chain with a CO group on the second C atom. In a neutral soln. (pH 6.8), a smaller amt. of II was formed as well as a reduced product assumed to be deuterolactoflavin. It had a more pos. potential than I. CH₂O in amts. equiv. to II was the only decomn. product of the sugar chain. In acid soln. (pH 1.8), decomn. of I was very slow, less II was formed, and no cleavage products of the sugar chain appeared polarographically.
 Helen L. Whidden

BA

AI-8

Sixtieth birthday of Prof. J. Heyrovský. R. Hručka (Coll. Trav. chim. Technol., 1950, 15, 681—686).—A biography, with stress on the scientific achievements, of Heyrovský. W. J. BAKER.

CA

Jaroslav Heyrovsky. R. Dvorka. Chem. Listy 44.
277-80(1950).—Survey of scientific activities up to 1950
(with portrait). M. Hudlický

1951

CA

The effect of the ionic recombination on the polarographic reduction of dibasic acids. V. Hanul and R. Hudlicka (Charles Univ., Prague). *Chem. Listy* 44, 201-7 (1950). Equations have been derived which account for the effect of ionic recombination on the polarographic limiting currents caused by the reduction of the undissoc. mols. or anions belonging to dibasic acids. As long as the limiting reduction currents of the undissoc. mols. appear in the range of pH where these mols. are practically absent in the body of the soln., their variation with pH can be expressed as follows: $2 \log i = \text{p}K_1 + \log(i_{\infty}/i_{\text{lim}}) \log([H^+] + K_1)$. Here, i_{∞} denotes the limiting reduction current of univalent anions, K_1 the 2nd acid dissocn. const., and $\text{p}K_1$ corresponds to the first apparent polarographic dissocn. const. which is a definite function of the equil. dissocn. const. of the specific rate because of the ionic recombination and of the drop time owing to the capillary electrode. The equation concerned shows that the apparent polarographic dissocn. curve for dibasic acids is not, in general, a symmetrical one, and it can be twice as steep as the dissocn. curve owing to univalent acids. All the relations derived theoretically have been verified by exptl. data obtained with maleic, citraconic, and fumaric acids. The thickness of the reaction layer surrounding the surface of the capillary electrode (according to the Wiener mathematical proposition) and the abs. rate const. of ionic recombination for the above acids have been computed.

K. Hanul and R. Hudlicka

1951

BRDICKA, R.

Atomic energy. Cas. cesk. lek. 63 no.14 157-163 July 1950.

(CJML 20:1)

CA

The sixtieth birthday of Professor J. Heyrovský. R.
Brdicka. *Collection Czechoslov. Chem. Commun.* 19, 691-8
(1951) (in English); cf. C.A. 45, 3207a.—Biography with
portrait. B. II.

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24(2.A)

PHASE I BOOK EXPLOITATION

CZECH/2433

International Polarographic Congress. 1st, Prague, 1951
Shorník I. Mezinárodní polarografického sjezdu. Díl 3. Hlavní
referáty přednesené na sjezdu. Proceedings...Vol. 3. Reviews
Read at the Congress. Praha, Přirodovědecký výtisk [1952]
774 p. 2,000 copies printed.

Resp. Ed.: J. Koryta, Doctor; Chief Ed. of Publishing House:
Milan Švalbík, Doctor; Tech. Ed.: Oldřich Duka.
PURPOSE: The book is intended for chemists, chemical engineers,
and physiologists.

COVERAGE: The book is a collection of reviews and original papers
read at the International Polarographic Congress held in Prague
in 1951. Uses of polarography in organic and inorganic analysis,
biochemistry, medicine and industrial chemistry are discussed.
In the section, English translations of each paper are
presented. In the section, Original Papers Read at the Congress,
only those translations in Russian, German, and English which
have not been published in Volume I are presented. The
following scientists participated in the opening of the
Congress: Professor Viktor Kemula, Dean of the Faculty
of Sciences; Professor Jaromír Dolanský, Minister
of Planning; Professor Jaroslav Hrobový, Chairman of
the Congress; and Professor Jaroslav Fukatko, Chairman
of the Center for Scientific Research and Technical
Development. References follow each paper.

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Valentis, P. Study of Current Discontinuity Appearing on
a Calomel Beam Electrode 377

Masek, J. Discontinuity on Polarographic Curves Observed

DEDICKA, N.

Evaluation of the rate constant of the decomposition of hydrogen peroxide by catalase from the polarographic limiting current of oxygen. J. Kotrčák, R. Bělák, and V. Hanuš (Czech. Acad. Sci., Prague), *Collection Czech. Chem. Commun.* 18, 811-28 (1953) (in English), *Chem. Listy* 47, 793-803 (1953).—Previous interpretations of the effect of catalase on the polarographic limiting currents due to the reduction of O were revised. Calculs. of the rate const. based on the concept of a reaction layer at the electrode were of only limited value. A rigorous soln. was given of the appropriate system of differential equations, taking into account the growth of the Hg drop, for a reaction in which half the originally present reactant (O) was regenerated from the reduction product (H₂O₂) by a chem. reaction with the catalyst (catalase). Values for the resulting function were tabulated, and the rate consts. calcd. by means of it were in good agreement with values obtained by direct manometric measurements.

Otto H. Müller

BRDICKA, R.; HANUS, V.; KOUTECKY, J.

Brdicka, R.; Hanus, V.; Koutecky, J. "Calculation of the rate constant for the decomposition of hydrogen peroxide by catalase from polarographic limiting currents caused by oxygen. p. 793 CASOPIS PRO PESTOVANI MATEMATIKY. CZECHOSLOVAK MATHEMATICAL JOURNAL. Vol. 47, no. 6, June 1953, Praha, Czechoslovakia.

SO: Monthly List of East European Accessions, LC., Vol. 3, No. 1, Jan. 1954, Uncl.

CZECH

✓ Polarographic limit currents controlled by the velocity of the chemical process. Rudolf Erička. *Chem. Průmysl* 4(29), 257-62(1954).—A ~~general discussion~~ and definition of the term limit currents with reference to their discovery by Wiesner in 1943. Examples are given: polarographic reduction of HCHO and aldehydic sugars and polarographic reduction of UO_2^{++} to the unstable 5-valent form.
L. A. Helwich

Brdicka, Rudolf
CZECHOSLOVAKIA/Electrochemistry

B-12

Abs Jour : Ref Zhur - Khimiya, No 8, 1957, 26303

Author : Rudolf Brdicka

Title : Kinetics of Reactions Preceding of Following Electrode Process.

Orig Pub : Chem. zvesti, 1954, 8, No 10, 670-692

Abstract : Detailed review of works concerning the precise and approximate solutions of problems connected with kinetic limitations of currents in polarography. Bibliography with 56 titles.

Card : 1/1

Brdicka, Rudolf

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CH/ Evaluation of the rate constants of reactions involved in polarographic electrode processes. Rudolf Brdicka. Collection Czechoslov. Chem. Commun. 49, Suppl. 2, 41-57 (1954); Proc. Intern. Congr. Pure and Appl. Chem., 13th Congr. Stockholm 1953 (in English).--The various theoretical treatises dealing with kinetic polarographic currents were reviewed and compared. Rate consts. of (a) recombination and (b) disson. were calcd. for 20 acids with pKs varying from 1.2 to 6.05. The consts. ranged from 8.41×10^4 to 1.94×10^5 l./mole sec. and from 2.43×10^2 to 7.20×10^4 per sec., resp. Otto H. Mäler.

~~BRDICKA KUDOL~~

Polaregraphic limiting currents of formaldehyde in unbuffered solutions. Rudolf Brdicka (Lab. pro res. chem. CSAV, Prague). *Chem. Listy* 48, 1155-68 (1954).--New exptl. data on limiting polarographic currents of HCHO (I) in borate buffer and NaOH solns. are reported. From these data the values of the products: $k_1 k_{OH}$, $k_1 k_{H_2O}$, and $k_2 k_{H_2O}$ have been computed by a rigorous method (Koutecký, cf. following abstr.); k_2 is the hydration equil. const. of I, the k 's are the rate consts. of corresponding bases which catalyze the dehydration of I and del. Its limiting reduction currents in addn. to the diffusion. From these values the limiting currents of I in unbuffered KCl solns. are calcd., where the hydration is catalyzed in addn. to the H_2O by the OH^- ions formed by the electroreduction of I. The nonlinear dependence of the limiting currents on the concn. of I and their abs. values calcd. from an approx. relation are in agreement with exptl. data.

R. Brdicka

BRDICKA, R.

Polarographic limiting current of formaldehyde in unbuffered solutions. In German.
p. 387

Vol. 20, no. 2, Apr. 1955
SBORNIK CHEKHOSLOVATSKIKH KHMICHESKIK RABOT
Praga, Czechoslovakia

So: Eastern European Accession Vol. 5, No. 4, April 1956

CZECHOSLOVAKIA/Physical Chemistry. Kinetics. Combustion.
Explosions. Topochemistry. Catalysis.

D-9

Abs Jour: Ref Zhur-Khim., No 13, 1958, 42587.

Author : Brdicka Rudolf, Spurny Zdenek.

Inst :

Title : Kinetics of Radio-Oxidation of Cystine in Aqueous
Solutions.

Orig Pub: Chem. listy, 1957, 51, No 7, 1267-1273.

Abstract: Soft x-rays (50 kv) accelerate oxidation of cystine
(I) in solution, in the presence of O_2 of the air.
Decrease of I, which is oxidized probably to di-
sulfoxide, was studied by the authors by the polaro-
graphic method in ammoniacal solutions of $CoCl_2$.
Kinetics of radio-oxidation was measured in the case
of 10^{-3} - 10^{-6} M solutions of I at dosage rates of

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CZECHOSLOVAKIA/Physical Chemistry. Kinetics. Combustion.
Explosions. Topochemistry. Catalysis.

B-9

Abs Jour: Ref Zhur-Khim., No 13, 1958, 42587.

33 roentgens/second. The graph representing the ratio of reaction yield G at pH 3 to the initial concentration has the configuration of a parabola, i.e., G is approximately proportional to the square root of the concentration of I . At dosages exceeding $18 \cdot 10^{17}$ Ev/nl, deviations from the above stated correlation, occur, which the authors attribute to a probable regeneration of I from the disulfoxide.

Card : 2/2

CZECHOSLOVAKIA / Physical Chemistry. Radiation Chem- B-10
istry. Photochemistry. Theory of the
Photographic Process.

Abs Jour: Ref Zhur-Khimiya, No 23, 1958, 76767.

Author : ~~Brdicka, R.~~ and Spurny, Z.

Inst : Not given.

Title : The Kinetics of the Radio-Oxidation of Cystine
in Aqueous Solutions.

Orig Pub: Collect Czechoslov Chem Commun, 23, No 4, 561-
568 (1958) (in German with a Russian summary).

Abstract: See RZhKhim, 1958, 42587.

Card 1/1

Z/037/60/000/01/001/014
E073/E535

AUTHOR: Brdička, R., Academician

TITLE: Academician Jaroslav Heyrovský, Winner of the 1959
Nobel Prize for Chemistry

PERIODICAL: Československý časopis pro fysiku, 1960, Nr 1,
pp 1-2 + 1 plate

ABSTRACT: Brief outline of the career of this well known scientist
who has done pioneering work in the field of polarography.
Professor Heyrovský is the Director of the Central
Institute for Polarography, Czechoslovak Academy of
Sciences. In 1951 he was awarded the first State Prize
for research in oscillographic polarography and in 1955
he was decorated with the Order of the Czechoslovak
Republic.

Card 1/1

Z/008/60/054/012/001/004
E073/E335

AUTHOR: Brdička, R.

TITLE: On the Seventieth Birthday of Academician Heyrovský

PERIODICAL: Chemické listy, 1960, Vol. 54, No. 12,
pp. 1219 - 1227 + 3 plates

TEXT: In 1950 the Ústřední ústav polarografický (Central Polarography Institute) was created which, under the leadership of Professor Heyrovský, was transferred two years later to the ČSAV. In 1951, Professor Heyrovský and the most able members of his team organised the First International Polarography Conference which was held in Prague. In 1952, a conference of practical polarography was held in Bratislava and at the Thirteenth International Congress of Pure and Applied Chemistry in Stockholm an entire section was reserved for polarography. In 1954, polarography discussion meetings were held at Smolenice with foreign participation. In 1955, polarography topics were discussed at the Congress of Electrochemistry in Warsaw and the First Czech-Hungarian Polarography Conference; the communications presented at the latter were

Card 1/3

Z/008/60/054/012/001/004
E073/E335

On the Seventieth Birthday of Academician Heyrovský
published in Vol. 9 of Acta Chimica (Hungary). Several other
congresses are mentioned in which polarography was discussed,
particularly the Second International Polarography Congress
held at Cambridge, England. In 1958, Professor Heyrovský
lectured in China. In 1960, he lectured in Egypt. He was
awarded the Nobel Prize in 1960. During the last twenty
years Professor Heyrovský has paid most attention to oscillo-
graphic polarography. In spite of his numerous administrative
responsibilities he still devotes a certain amount of time
to laboratory work. He studied various types of curves
produced on an oscillograph screen, using an impressed
alternating current, i.e. curves of the dependence of the
potential of a mercury drop or of a jet electrode on time and
the dependence of the change with time of this potential on
time or voltage. He considers the study of this dependence
to be of the utmost importance since it provides new views
on the nature of electrode processes and, in some cases, it

Card 2/3

Z/008/60/054/012/001/004
E073/E335

On the Seventieth Birthday of Academician Heyrovský
enables analysis at lightning speed of investigated specimens. Professor Heyrovský is following closely the problems relating to hydrogen overvoltage, electrode reversibility of oxidation-reduction systems, current maxima, the influence of surface-active substances on electrode processes and other problems, to the solution of which he has contributed directly or indirectly. He guides and coordinates his team in their research work. He also takes an active interest in the development of polarographic and oscillographic apparatus and other experimental equipment. A list is included at the end of the paper of the books and papers published by Professor Heyrovský. This list includes 170 papers published in periodicals, 16 papers published in books and 12 books. ✓

Card 3/3

STARK, O.; KREN, V.; FRENZL, B.; BRDICKA, R.

Attempt to induce a "graft versus host" reaction in grown tolerant chicks and the causes of its failure. Folia biol. 7 no14:243-251 '61.

1. Department of Biology, Faculty of General Medicine, Charles University, Prague.

(TRANSPLANTATION immunol.)

(SKIN TRANSPLANTATION immunol.)

CZECHOSLOVAKIA

BRDICKA, R; SPURNY, Z; FOJTIK, A.

Institute of Physical Chemistry and Institute of Nuclear
Research of the Czechoslovak Academy of Sciences, Prague

Prague, Collection of Czechoslovak Chemical Communications,
No 6, 1963, pp 1491-1498

"Effect of the Dose Intensity on the Rate of Radio-Oxidation
of Cystine in Aqueous Solutions."

BRDICKA, R.; SPURNY, Z.; FOJTIK, A.

Effect of the dose intensity on the rate of radio-oxidation
of cystine in aqueous solutions. Coll Cz Chem 28 no.6:1491-1498
Je '63.

1. Institute of Physical Chemistry and Institute of Nuclear
Research, Czechoslovak Academy of Sciences, Prague.